

Appendix

Pending Claims in U.S. Application Serial No. 10/045,049

1. – 8. (Cancelled)

9. (Previously Presented) A layer, wherein the layer is obtained by thermal treatment from an aqueous dispersion applied to a substrate, the dispersion containing a silicon/titanium mixed oxide powder prepared by flame hydrolysis and the titanium dioxide content of the powder ranges from 2 to 20 wt.%.

10. (Previously Presented) The layer as claimed in claim 9, wherein the thickness of the layer ranges from 100 nm to 1 mm.

11. (Previously Presented) The layer as claimed in claim 9, wherein the thickness of the layer ranges from 1 μm to 50 μm .

12. (Previously Presented) The layer as claimed in claim 9, wherein the thickness of the layer ranges from 5 μm to 15 μm .

13. (Previously Presented) The layer as claimed in claim 9, wherein the BET surface area of the powder ranges from 5 to 500 m^2/g .

14. (Previously Presented) The layer as claimed in claim 9, wherein said silicon/titanium mixed oxide powder is a mixture of powders comprising at least one powder having a BET surface area of at least 130 m^2/g and at least one powder having a BET surface area of at most 90 m^2/g , wherein the ratio by weight of the powders with a lower BET to the powders with a higher BET surface area ranges from 40:60 to 99.5:0.5.

15. (Previously Presented) The layer as claimed in claim 14, wherein said silicon/titanium mixed oxide powder is a mixture of powders comprising at least one powder having a BET surface area of at least 170 m^2/g and at least one powder having a BET surface area of at most 70 m^2/g , wherein the ratio by weight of the powders with a lower BET to the powders with a higher BET surface area ranges from 40:60 to 99.5:0.5.

16. (Previously Presented) The layer as claimed in claim 9, wherein the substrate is selected from the group consisting of borosilicate glass, silica glass, glass ceramic, and a material with a very low coefficient of expansion.

17. (Previously Presented) The layer as claimed in claim 9, further comprising less than 0.5 wt.% of impurities.

18. (Withdrawn) A process for preparing the layer as claimed in claim 9, comprising applying a dispersion containing a silicon/titanium mixed oxide powder to a substrate, and thermal treatment sintering the dispersion applied to the substrate.

19. (Withdrawn) The process as claimed in claim 18, further comprising preparing the dispersion by flame hydrolyzing a silicon/titanium mixed oxide powder, wherein the proportion of powder ranges from 0.1 to 60 wt.% in the dispersion.

20. (Withdrawn) A method comprising coating a material with a layer as claimed in claim 9, wherein said material is selected from the group consisting of an ultra-low expansion material a photocatalytic material, a self-cleaning mirror, a superhydrophilic constituent, a lens, a container for a gas and a container for a liquid.

21. (Previously Presented) A layer, wherein the layer is obtained by thermal treatment from an aqueous dispersion applied to a substrate, the dispersion containing a silicon/titanium mixed oxide powder prepared by flame hydrolysis and wherein said silicon/titanium mixed oxide powder is a mixture of powders comprising at least one powder having a BET surface area of at least $130 \text{ m}^2/\text{g}$ and at least one powder having a BET surface area of at most $90 \text{ m}^2/\text{g}$, wherein the ratio by weight of the powders with a lower BET to the powders with a higher BET surface area ranges from 40:60 to 99.5:0.5.

22. (Previously Presented) The layer as claimed in claim 21, wherein the thickness of the layer ranges from 100 nm to 1 mm.

23. (Previously Presented) The layer as claimed in claim 21, wherein the thickness of the layer ranges from 1 μm to 50 μm .

24. (Previously Presented) The layer as claimed in claim 21, wherein the thickness of the layer ranges from 5 μm to 15 μm .

25. (Currently Amended) The layer as claimed in claim 21, wherein the BET surface area of the powder ranges from 5 to 500 m^2/g .

26. (Previously Presented) The layer as claimed in claim 21, wherein said silicon/titanium mixed oxide powder is a mixture of powders comprising at least one powder having a BET surface area of at least 170 m^2/g and at least one powder having a BET surface area of at most 70 m^2/g , wherein the ratio by weight of the powders with a lower BET to the powders with a higher BET surface area ranges from 40:60 to 99.5:0.5.

27. (Previously Presented) The layer as claimed in claim 21, wherein the titanium dioxide content of the powder ranges from 0.1 to 99.9 wt.%.

28. (Previously Presented) The layer as claimed in claim 21, wherein the titanium dioxide content of the powder ranges from 2 to 20 wt.%.

29. (Previously Presented) The layer as claimed in claim 21, wherein the substrate is selected from the group consisting of borosilicate glass, silica glass, glass ceramic, and a material with a very low coefficient of expansion.

30. (Previously Presented) The layer as claimed in claim 21, further comprising less than 0.5 wt.% of impurities.

31. (Withdrawn) A process for preparing the layer as claimed in claim 21, comprising applying a dispersion containing a silicon/titanium mixed oxide powder to a substrate, and thermal treatment sintering the dispersion applied to the substrate.

32. (Withdrawn) The process as claimed in claim 31, further comprising preparing the dispersion by flame hydrolyzing a silicon/titanium mixed oxide powder, wherein the proportion of powder ranges from 0.1 to 60 wt.% in the dispersion.

33. (Withdrawn) A method comprising coating a material with a layer as claimed in claim 21, wherein said material is selected from the group consisting of an ultra-low expansion material a photocatalytic material, a self-cleaning mirror, a superhydrophilic constituent, a lens, a container for a gas and a container for a liquid.